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10/006,067	12/06/2001	Davide Mandato	282665US8X	9049

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EXAMINER	
BATURAY, ALICIA	
ART UNIT	PAPER NUMBER
2446	

NOTIFICATION DATE	DELIVERY MODE
10/13/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/006,067	MANDATO ET AL.	
	Examiner	Art Unit	
	Alicia Baturay	2446	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24 and 27-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24 and 27-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/21/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), which was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 September 2009 has been entered.

2. Claim 24 was amended.

3. Claims 1-23, 25, 26 and 47 were cancelled.

4. Claims 24 and 27-46 are pending in this Office Action.

Response to Amendment

5. Applicant's amendments and arguments with respect to claims 24 and 27-46 filed on 21 September 2009 have been fully considered but they are deemed to be moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Regarding claim 24, the phrase "quality-of-service specifications of a Session Context from the quality-of-service specifications of the nesting Application and Session Contexts" renders the claim indefinite because it is unclear how quality-of-service specifications of a

Session Context can be derived from itself ("quality-of-service specifications of a Session Context can be derived from the quality-of-service specifications of the nesting Session Contexts.") See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 24, 27-40 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinky et al. (U.S. 6,480,879) in view of Shastri (U.S. 2002/0065922) and further in view of Rinne et al. (U.S. 6,711,141).

Zinky teaches the invention substantially as claimed including a system that determines the quality of service and regulates activity within the distributed system based on the determined quality of service (see Abstract).

10. With respect to claim 24, Zinky teaches a computer readable tangible storage medium having a computer program stored thereon for managing quality of service, the program representing middleware and comprising executable instructions that cause a computer to:

configure an application programming interface (Zinky, col. 9, lines 47-50) as a data model describing quality-of-service adaptation paths (Zinky, col. 8, lines 48-56) as specified by quality-of-service aware mobile multimedia applications (Zinky, col. 2, lines 61-63) using said application programming interface, in order to manage quality-of-service and mobility-aware network connections with other applications (Zinky, col. 6, lines 22-30) and wherein the application paths are modeled as hierarchical finite state machines (Zinky, col. 6, lines 22-36).

Zinky does not explicitly teach where the middleware is adapted to repeatedly measure the actual quality-of-service.

However, Shastri teaches where a quality-of-service adaptation path defining an adaptation policy in terms of alternative quality-of-service contracts identifying alternative quality-of-service specifications (Shastri, page 6, paragraphs 60 and 66) and rules for switching between the alternative quality-of-service contracts based on a comparison of the contracted QoS specification with the actual quality-of-service (Shastri, page 5, paragraphs 54-55), and where in the middleware is adapted to repeatedly measure the actual quality-of-service (Shastri, page 4, paragraph 43) and to repeatedly select one of the alterative quality-of-service contracts according to the rules for switching between the alternative quality-of-service contracts based on a comparison of the contracted quality-of-service specifications with the actual quality-of-service (Shastri, page 5, paragraphs 54-57), the quality of service specifications of the selected quality-of-service contract describing a currently to be achieved quality-of-service for one or more network connections (Shastri, page 5, paragraphs 54-55), and wherein the adaptation paths are modeled as a hierarchical finite state machines, each

quality-of-service contract of an adaptation path corresponding to a different state of a hierarchical finite state machine, said rules for switching between the alternative quality-of-service contracts corresponding to transitions between the states of a hierarchical finite state machine (Shastri, page 6, paragraphs 62-63) and each hierarchical finite state machine comprising: a finite state machine associated with a User Context, a finite state machine associated with an Application Context nested in said finite state machine associated with said User Context (Shastri, page 6, paragraphs 61-62) and a finite state machine associated with a Session Context nested in said finite state machine associated with said Application Context (Shastri, page 6, paragraphs 62-63), wherein said User Context (Shastri, page 5, paragraph 58), said Application Context (Shastri, pages 3-4, paragraphs 33 and 41) and said Session Context (Shastri, pages 4-5, paragraphs 38, 40, and 48) each identify an arrangement of quality-of-service specifications enforceable through a set of streams belonging to a given user (Shastri, page 2, paragraph 13), multimedia application (Shastri, page 1, paragraph 4) and telecommunication session (Shastri, page 1, paragraph 10), respectively (Shastri, page 6, paragraphs 61-64), the given user partaking in the given telecommunications session by means of executing the given multimedia application (Shastri, page 6, paragraph 61), and wherein said arrangements of quality-of-service specifications identified in said User Context, said Application Context and said Session Context are specified by said multimedia applications using said application programming interface (Shastri, page 5, paragraph 43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zinky in view of Shastri in order to teach where the middleware is adapted to repeatedly measure the actual quality-of-service. One would be motivated to do so

in order to be assured that a best-suited server is being used throughout the playback of content at all times.

The combination of Zinky and Shastri do not explicitly teach deriving quality-of-service specification of the nesting contexts.

However, Rinne teaches wherein said middleware derives quality-of-service specifications of an Application Context from the quality-of-service specifications of the nesting User Context (Rinne, col. 4, lines 42-48) and quality-of-service specifications of a Session Context from the quality-of-service specifications of the nesting Application and Session Contexts (Rinne, col. 4, lines 33-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Zinky and Shastri in view of Rinne in order to teach deriving quality-of-service specification of the nesting contexts. One would be motivated to do so in order to define a different quality of service to each application.

11. With respect to claim 27, Zinky teaches the invention described in claim 24, including the computer readable tangible storage medium wherein the hierarchical finite state machines comprise controllable states in the context of streams at the lowermost level (Zinky, col. 7, lines 26-36).

12. With respect to claim 28, Zinky teaches the invention described in claim 24, including the computer readable tangible storage medium wherein quality-of-service synchronization is provided so as to ensure that some user's given constraints on quality-of-service are globally

enforced throughout a given set of streams (Zinky, col. 3, lines 60-67) by applying a defined set of quality-of-service constraints to each stream of a set of streams (Zinky, col. 1, lines 40-54).

13. With respect to claim 29, Zinky teaches the invention described in claim 24, including the computer readable tangible storage medium wherein the specification of the quality-of-service contracts comprises hysteresis parameters for the transition between quality-of-service states (Zinky, col. 9, lines 51-56) time synchronization is provided for a multiplicity of related streams by a definition of time-synchronization constraints for related streams having the same destination (Zinky, col. 1, lines 40-54).

14. With respect to claim 30, Zinky teaches the invention described in claim 24, including the computer readable tangible storage medium wherein the specification of the quality-of-service contracts comprises utility parameters defining user's perceived utility factors associated with the respective quality-of-service contract (Zinky, col. 6, lines 12-21).

15. With respect to claim 31, Zinky teaches the invention described in claim 24, the computer readable tangible storage medium further characterizing executable instructions that cause a computer to provide an application handler unit to offer the application programming interface for providing quality-of-service aware mobile multimedia applications with the possibility of managing network connections with other applications (Zinky, col. 5, line 66 – col. 6, line 4).

16. With respect to claim 32, Zinky teaches the invention described in claim 31, including the computer readable tangible storage medium wherein the application handler unit registers requests for notification events from applications and generates such events whenever the corresponding triggering conditions occur (Zinky, col. 7, lines 52-57).

17. With respect to claim 33, Zinky teaches the invention described in claim 31, including the computer readable tangible storage medium wherein the application handler unit operates on the basis of a data model comprising streams, quality-of-service context (Zinky, col. 6, lines 7-11), quality-of-service associations and adaptation paths (Zinky, col. 8, lines 48-56) modeled as hierarchical finite state machines (Zinky, col. 6, lines 22-36).

18. With respect to claim 34, Zinky teaches the invention described in claim 33, including the computer readable tangible storage medium wherein the application handler unit creates for each unidirectional stream an instance of a chain controller for handling data plane and quality-of-service control plane related issues (Zinky, col. 7, lines 6-18).

19. With respect to claim 35, Zinky teaches the invention described in claim 34, including the computer readable tangible storage medium wherein the chain controller compares the quality-of-service requirements of a user with actual values of monitored parameters and configures a chain of multimedia components accordingly (Zinky, col. 7, lines 38-57).

20. With respect to claim 36, Zinky teaches the invention described in claim 35, including the computer readable tangible storage medium wherein the chain controller creates and manages a transport service interface socket, whereby the multimedia components directly exchange data through the transport service interface socket (Zinky, col. 5, lines 52-65).

21. With respect to claim 37, Zinky teaches the invention described in claim 34, including the computer readable tangible storage medium wherein the chain controller monitors and controls the local resources required to process the given stream by using resource managers (Zinky, col. 9, lines 30-38).

22. With respect to claim 38, Zinky teaches the invention described in claim 34, including the computer readable tangible storage medium further comprising executable instructions that cause a computer to configure a quality-of-service broker for managing overall local resources by managing the whole set of streams via the chain controllers (Zinky, col. 5, lines 23-30).

23. With respect to claim 39, Zinky teaches the invention described in claim 38, including the computer readable tangible storage medium wherein the quality-of-service broker manages system-wide resources via resource controllers (Zinky, col. 9, lines 30-38).

24. With respect to claim 40, Zinky teaches the invention described in claim 38, including the computer readable tangible storage medium wherein the quality-of-service broker controls

end-to-end quality-of-service negotiation by using a session manager (Zinky, col. 3, lines 60-67).

25. With respect to claim 43, Zinky teaches the invention described in claim 34, including the computer readable tangible storage medium wherein the application handler unit and the various instances of the chain controller are forming an application handler cluster (Zinky, col. 4, lines 20-31).

26. Claims 41, 42 and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinky in view of Shastri in view of Rinne and further in view of Neureiter et al. ("The BRAIN Quality of Service Architecture for Adaptable Services with Mobility Support").

27. With respect to claim 41, Zinky teaches the invention described in claim 38, including a computer readable tangible storage medium having a computer program stored thereon for managing quality of service, the program representing middleware and comprising executable instructions that cause a computer to: configure an application programming interface (Zinky, col. 9, lines 47-50) as a data model describing quality-of-service adaptation paths (Zinky, col. 8, lines 48-56) as specified by quality-of-service aware mobile multimedia applications (Zinky, col. 2, lines 61-63) using said application programming interface, in order to manage quality-of-service and mobility-aware network connections with other

applications (Zinky, col. 6, lines 22-30) and wherein the application paths are modeled as hierarchical finite state machines (Zinky, col. 6, lines 22-36).

Zinky does not explicitly teach where the middleware is adapted to repeatedly measure the actual quality-of-service.

However, Shastri teaches where a quality-of-service adaptation path defining an adaptation policy in terms of alternative quality-of-service contracts identifying alternative quality-of-service specifications (Shastri, page 6, paragraph 60) and rules for switching between the alternative quality-of-service contracts based on a comparison of the contracted QoS specification with the actual quality-of-service (Shastri, page 5, paragraphs 54-55), and where in the middleware is adapted to repeatedly measure the actual quality-of-service (Shastri, page 4, paragraph 43) and to repeatedly select one of the alterative quality-of-service contracts according to the rules for switching between the alternative quality-of-service contracts based on a comparison of the contracted quality-of-service specifications with the actual quality-of-service (Shastri, page 5, paragraphs 54-57), the quality of service specifications of the selected quality-of-service contract describing a currently to be achieved quality-of-service for one or more network connections (Shastri, page 5, paragraphs 54-55), and wherein the adaptation paths are modeled as a hierarchical finite state machines, each quality-of-service contract of an adaptation path corresponding to a different state of a hierarchical finite state machine, said rules for switching between the alternative quality-of-service contracts corresponding to transitions between the states of a hierarchical finite state machine (Shastri, page 6, paragraphs 62-63) and each hierarchical finite state machine comprising: a finite state machine associated with a User Context, a finite state machine

associated with an Application Context nested in said finite state machine associated with said User Context (Shastri, page 6, paragraphs 61-62) and a finite state machine associated with a Session Context nested in said finite state machine associated with said Application Context (Shastri, page 6, paragraphs 62-63), wherein said User Context, said Application Context and said Session Context each identify an arrangement of quality-of-service specifications enforceable through a set of streams belonging to a given user, multimedia application and telecommunication session, respectively (Shastri, page 6, paragraphs 61-64), the given user partaking in the given telecommunications session by means of executing the given multimedia application (Shastri, page 6, paragraph 61), and wherein said arrangements of quality-of-service specifications identified in said User Context, said Application Context and said Session Context are specified by said multimedia applications using said application (Shastri, page 5, paragraph 43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zinky in view of Shastri in order to teach where the middleware is adapted to repeatedly measure the actual quality-of-service. One would be motivated to do so in order to be assured that a best-suited server is being used throughout the playback of content at all times.

The combination of Zinky and Shastri do not explicitly teach deriving quality-of-service specification of the nesting contexts.

However, Rinne teaches wherein said middleware derives quality-of-service specifications of an Application Context from the quality-of-service specifications of the nesting User Context (Rinne, col. 4, lines 42-48) and quality-of-service specifications of a

Session Context from the quality-of-service specifications of the nesting Application and Session Contexts (Rinne, col. 4, lines 33-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Zinky and Shastri in view of Rinne in order to teach deriving quality-of-service specification of the nesting contexts. One would be motivated to do so in order to define a different quality of service to each application.

The combination of Zinky, Shastri and Rinne does not explicitly teach the use of downloading plug-ins.

However, Neureiter teaches the computer program where the quality-of-service broker includes further functionality for downloading plug-ins corresponding to a given version of a data model which can not be handled by the application handler unit (Neureiter, page 447, "The Proposed BRAIN End Terminal Architecture (BRENTA)," paragraph 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Zinky, Shastri and Rinne in view of Neureiter in order to the use of downloading plug-ins. One would be motivated to do so in order to support middleware functionality, which provides quality of service support for applications.

28. With respect to claim 42, Zinky teaches the invention described in claim 41, including a computer readable tangible storage medium having a computer program stored thereon for managing quality of service, the program representing middleware and comprising executable instructions that cause a computer to: configure an application programming interface (Zinky, col. 9, lines 47-50) as a data model describing quality-of-service adaptation

paths (Zinky, col. 8, lines 48-56) as specified by quality-of-service aware mobile multimedia applications (Zinky, col. 2, lines 61-63) using said application programming interface, in order to manage quality-of-service and mobility-aware network connections with other applications (Zinky, col. 6, lines 22-30) and wherein the application paths are modeled as hierarchical finite state machines (Zinky, col. 6, lines 22-36).

Zinky does not explicitly teach where the middleware is adapted to repeatedly measure the actual quality-of-service.

However, Shastri teaches where a quality-of-service adaptation path defining an adaptation policy in terms of alternative quality-of-service contracts identifying alternative quality-of-service specifications (Shastri, page 6, paragraph 60) and rules for switching between the alternative quality-of-service contracts based on a comparison of the contracted QoS specification with the actual quality-of-service (Shastri, page 5, paragraphs 54-55), and where in the middleware is adapted to repeatedly measure the actual quality-of-service (Shastri, page 4, paragraph 43) and to repeatedly select one of the alterative quality-of-service contracts according to the rules for switching between the alternative quality-of-service contracts based on a comparison of the contracted quality-of-service specifications with the actual quality-of-service (Shastri, page 5, paragraphs 54-57), the quality of service specifications of the selected quality-of-service contract describing a currently to be achieved quality-of-service for one or more network connections (Shastri, page 5, paragraphs 54-55), and wherein the adaptation paths are modeled as a hierarchical finite state machines, each quality-of-service contract of an adaptation path corresponding to a different state of a hierarchical finite state machine, said rules for switching between the alternative quality-of-

service contracts corresponding to transitions between the states of a hierarchical finite state machine (Shastri, page 6, paragraphs 62-63) and each hierarchical finite state machine comprising: a finite state machine associated with a User Context, a finite state machine associated with an Application Context nested in said finite state machine associated with said User Context (Shastri, page 6, paragraphs 61-62) and a finite state machine associated with a Session Context nested in said finite state machine associated with said Application Context (Shastri, page 6, paragraphs 62-63), wherein said User Context, said Application Context and said Session Context each identify an arrangement of quality-of-service specifications enforceable through a set of streams belonging to a given user, multimedia application and telecommunication session, respectively (Shastri, page 6, paragraphs 61-64), the given user partaking in the given telecommunications session by means of executing the given multimedia application (Shastri, page 6, paragraph 61), and wherein said arrangements of quality-of-service specifications identified in said User Context, said Application Context and said Session Context are specified by said multimedia applications using said application (Shastri, page 5, paragraph 43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Zinky in view of Shastri in order to teach where the middleware is adapted to repeatedly measure the actual quality-of-service. One would be motivated to do so in order to be assured that a best-suited server is being used throughout the playback of content at all times.

The combination of Zinky and Shastri do not explicitly teach deriving quality-of-service specification of the nesting contexts.

However, Rinne teaches wherein said middleware derives quality-of-service specifications of an Application Context from the quality-of-service specifications of the nesting User Context (Rinne, col. 4, lines 42-48) and quality-of-service specifications of a Session Context from the quality-of-service specifications of the nesting Application and Session Contexts (Rinne, col. 4, lines 33-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Zinky and Shastri in view of Rinne in order to teach deriving quality-of-service specification of the nesting contexts. One would be motivated to do so in order to define a different quality of service to each application.

The combination of Zinky, Shastri and Rinne does not explicitly teach a quality-of-service broker cluster.

However, Neureiter teaches the computer program where the quality-of-service broker and the plug-ins are forming a quality-of-service broker cluster (Neureiter, page 449, "Component," "Chain Coordinator (ChC)" and "QoS Broker").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Zinky, Shastri and Rinne in view of Neureiter in order to enable the use of a quality-of-service broker cluster. One would be motivated to do so in order to support middleware functionality, which provides quality of service support for applications.

29. With respect to claim 44, Zinky teaches the invention described in claim 42, including the computer readable tangible storage medium wherein the application handler cluster and the

quality-of-service broker cluster are included in one open distributed processing capsule (Zinky, col. 5, lines 10-18).

30. With respect to claim 45, Zinky teaches the invention described in claim 42, including the computer readable tangible storage medium wherein the application handler cluster and the quality-of-service broker cluster are included in separate open distributed processing capsules (Zinky, col. 5, lines 10-18).

31. With respect to claim 46, Zinky teaches the invention described in claim 45, including the computer readable tangible storage medium wherein the application handler cluster being included in one open distributed processing capsule is installed on a given local node and the quality-of-service broker cluster being included in separate open distributed processing capsule is installed on a separate open distributed processing node, whereby a proxy quality-of-service broker is installed on the given local node (Zinky, col. 5, lines 11-16).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Baturay whose telephone number is (571) 272-3981. The examiner can normally be reached at 7:30am - 5pm, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Pwu can be reached on (571) 272-6798. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alicia Baturay
October 8, 2009

/Jeffrey Pwu/

Supervisory Patent Examiner, Art Unit 2446